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AND

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NORTH GREENLAND MICROLEPIDOPTERA.

By Prof. C. H. FERNALD, Amherst, Mass.

The insects described in this paper were captured at McCormick Bay, North Greenland, in lat. 77° 42′ North, between July 25 and Aug. 1, 1891, by Mr. Levi W. Mengel, entomologist, and Dr. W. E. Hughes, ornithologist of the West Greenland expedition. This party was sent out by the Philadelphia Academy of Sciences to escort Lieut. R. E. Peary to his Winter quarters at McCormick Bay.

Mr. Mengel wrote me as follows: "The microlepidoptera were caught at the following places: Godhavn, on Disco Island, two species at Upernavik, three specimens at Cape York, and the remainder were taken at McCormick Bay. I can safely say that 75 per cent. of all the insects were taken at this locality, though we had but two good collecting days while there, all the others being foggy, cold and damp. The insects, especially the micros, did not fly unless the sun was shining.

"The shores at McCormick Bay, and in fact all the coast visited, sloped gently inward for distances ranging from 500 to 1000 yards, rarely further, unless glaciers or glacial streams were descending from the ice cap. The side of the mountain then arose

precipitously to the height of 2000 feet or more. It was along this narrow strip or belt of land bordering the sea that nearly all animal life was found. The soil was fairly fertile, though frozen below the depth of a few inches. Along this strip many flowering plants were growing. Here we caught many of our larger insects, but where the vegetation became scarce along the base of the mountain where the great mass of boulders lay which had become detached from the mountain side, the micros were most abundant. They were extremely hard to catch, and being nearly of the same color as the lichen-covered rocks, were more easily overlooked. When detected they would run rapidly and hide under some projecting leaf or rock. They flew with a quick jerky flight for a short distance and generally alighted on the rocks or on the lichens with which they were covered, and seldom alighted on the herbage.

"Diligent search failed to discover any cocoons. Several minute larvæ about one-fourth in. long, of a pea-green color were found crawling along the side of the boulder. I was unable to find the food-plant, but attempted to raise them offering them both moss and lichen, but they refused to eat and died. Another larva was found on the stem of some species of *Campanula.* It was green inclining to olive in color on the forward part, and was about three-eights of an inch long. I attempted to raise this larva also, but it refused to eat, and therefore died. I believe, however, that it may have been the larva of one of the micros, though of course I do not know.

"Willow and birch are the only trees found in Greenland, and in the northern part, at least, they never exceed four or five inches in height. I am inclined to think that these little trees are the food-plants of a number of species, notwithstanding the fact I was unsuccessful in locating the larvæ."

The information given by Mr. Mengel in his letter to me, extracts of which are given above, is of great interest, and gives us a better idea of the conditions under which these insects lived than we might otherwise obtain.

Unfortunately, all the specimens sent to me are marked "Greenland," but Prof. Skinner, who sent them, stated that they were taken at McCormick Bay.

One of the species sent is a small pale green Geometer in very poor condition, but strongly resembles *Nemoria.* There were

also four examples of *Laodama fusca* Haw., one male and three females. This species has a wide distribution occurring over northern and central Europe, Japan, North America, Iceland and Greenland.

The larva is supposed to feed on *Betula* and *Calluna*, and has been bred from the egg on *Vaccinium myrtillus*, and also on *Salix caprea*. It is therefore very probable that the larvæ of this species fed on the dwarf birch or willow as Mr. Mengel conjectured.

It is not probable that the larvæ found by Mr. Mengel belonged to this species since the imagos were on the wing during the seven days he was at McCormick Bay, and at this time they laid their eggs, which are known to hatch in about ten days, and they are supposed to hibernate during the Winter as half-grown caterpillars.

There were in the collection thirty-two examples of *Pyrausta torvalis* Moesch. This species was first described by Moeschler in the Wiener Entom. Monatsch., Band vii, p. 198, pl. v, fig. 16 (1864), from Labrador, and Staudinger also gives the Pyranees as its habitat. The early stages and food-plant are unknown.

The collection also contained ten examples of a new species which I have named for Mr. Mengel, the entomologist of the expedition,—

Sericoris mengelana n. sp.—Expanse of wings 20 mm. Head and antennæ black; palpi black, whitish at the base, and with a whitish spot on the outside of the second joint. Thorax black, with a few scattered white scales almost forming a band across the thorax just in front of the small tuft. Fore wings black, with a white spot on the basal third of the costa extending down to the median vein, and on the costa in the middle of this spot there is a small black spot with another below it. On either side is an oblique black hair line through the white spot, below which are a few scattered white scales. From the outer fourth of the costa a white band extends to the anal angle. This band sends out a prolongation on the costa and one into the cell, and it also has two black spots on the costa, the outer one of which is elongated. Two minute white spots rest on the deep black ground of the middle of the costa, and the basal part of the costa has a few sprinkles of white. The fringe is black at the apex, but black and white mixed elsewhere. Hind wings and abdomen above dark ashy gray. Underside of the abdomen and wings ashy gray, with the markings of the upperside of the wings indicated. Legs dark brown, annulate with whitish.

Described from ten examples in poor condition.

One of the most interesting features of this small collection is the very dark color of the insects. The specimens of the *Laodama fusca*, and also of *Pyrausta torvalis*, are much darker than any I have ever seen before, either of those taken in New England or in Labrador, but when we recall that Mr. Mengel states that they rest on the lichen-colored rocks we have not far to seek for the cause of this dark color. The lichens, which almost entirely cover the rocks in northern regions, are very dark brown or black, and when insects habitually rest on such places the lighter colored varieties are more easily seen and destroyed by their enemies and the dark forms are left to propagate the species, and, as a result, a dark race is formed in time.

———o———

Third Addition to the list of Dragonflies (Odonata) of Manchester, Kennebec County, Maine.

By Miss Mattie Wadsworth

(See Ent. News, vol. i, pp. 36, 55; vol. ii, p. 11; vol. iii, p. 8.

10*a*. **Lestes unguiculata** Hag.

1890, July 15, one ♂ over Snake Pond; recently determined.

6*f*. **Enallagma pollutum?** Hag.

1893, June 29, two teneral ♂ ♂ near Lake Cobbosseecontee.

43*a*. **Celithemis elisa** Hag.

1893, June 22, one ♀ in pasture near woods.

39. **Leucorhinia proxima** Calvert.

The ♀ of this species has not been recorded from this locality.

1892, June 15, one ♀ near brook.

1893, June 18, 20, July 11, one ♀ each day, all near brook.

These have been identified, as all others have been, by Mr. P. P. Calvert, of Philadelphia.

Fifty-seven species of dragonflies have now been found in this place, and forty-five of these were seen or taken, during 1893. Of the rarer species but few were noted: one *Cordulia* (*Somatochlora*) *lepida* Selys, one *Gomphus parvulus* Selys, and a *G. spinosus* Selys, were taken. The only *Epitheca* (*Somatochlora*) *forcipata* Scud. seen, was sufficiently accommodating to alight on the house and be taken by the hand. One *Fonscolombia vinosa* Say was found on the window, in the horse's stall.

COLLECTING IN UTAH.—Part I.

By Arthur J. Snyder.

From Tuesday night, when I entered a darkened car in the yard of the Northwestern Depot at Chicago, until Friday about 1 P.M. seems a long time to continue traveling westward at the speed trains now attain "just to catch butterflies!" as "Billy," the waiter in our restaurant said. To any except interested naturalists such a trip may even seem ridiculous.

Though my net and killing bottle were constantly at hand they proved of but little use until near the end of my journey. Once we were delayed in the midst of a seemingly boundless sage thicket by the breaking of our engine. I fully employed the time by making a thorough search for insects. My entire catch was two small Geometers which were whipped from the sage. One other moth was started which resembled a *Syneda*, but it escaped.

At Croyden, Utah, while the train stopped for a few moments I found butterflies abundant, especially on the flowers of a species of *Echinosternum*. Several *Lycæna*, a *Melitæa*, and *Pyrgus cæspitalis* were taken here.

About noon on Friday our train reached the beautiful city of Ogden. Here I parted company with Mr. Vernon Bailey, collector of birds and mammals for the Smithsonian Institute, and who had introduced himself at once on noting my collecting outfit. Although our acquaintance was of but a few hours, it was pleasant to meet some one interested in the same line of work who had been over the ground and could, in that brief time, give me valuable information concerning the territory in which I was to collect.

From Ogden to Salt Lake City was but a short trip through fields of *Alfalfa* then in bloom, and especially beautiful after having passed through hundreds of miles of sage brush.

It is not my purpose to fully describe the delightful scenery nor to enter into an extended description of the beautiful city of Salt Lake. Cool mountain streams are always refreshing, but to see them flowing where we usually see filthy gutters was indeed a restful and interesting sight.

After wandering for a short time through the beautiful wide streets of the city and securing a room, I at once began the chase. The first specimen seen was *P. rutulus*. In the streets of the

city, and away from the busy parts, I soon found *Chrysophanus helloides* in abundance. One of my first captures was a perfect *Epicallia virginalis*, which had just emerged from the chrysalis, crawled onto a weed and had not yet tried its wings. This species I found only in the vicinity of Salt Lake, and though quite a number were seen flying about only four were taken in all.

On this first afternoon *P. camillus*, *P. pratensis*, *Leucarctia acrea*, *Cœnonympha ochracea*, *Lycæna acmon*, a *Pamphila* and *Plusia californica* were taken besides those I have mentioned. The *Phyciodes* and *Cœnonympha* were quite common on blossoms of *Alfalfa*.

On the following morning not knowing where to go I started out to find the best resorts and took the north side of the city. Trains run from Salt Lake City to the Salt Springs and Bountiful. From the terminus of the car line I started for the mountains modestly, as I thought, determined to go to one of the nearest banks of snow and be content for the first day. About noon the snow seemed as far away as ever so I gave it up and started on my return. During this forenoon I saw for the first time the beautiful *Callochortus nuttallii* or Sego Lily, the flower of Utah. In the lowlands I found the same species of insects as on the day previous and *P. tessellata*, also *Vanessa milbertii*. On the mountains *L. pheres* and *L. acmon* were abundant, with an occasional *Eudamus nevada*. One *P. rutulus* was taken, and several were seen about the blossoms of Honey Locust trees. It may be of interest to note that at Bountiful I found the fruit trees nearly stripped of foliage by the larvæ of *Clisiocampa californica* (I may be wrong as to species); *californica* was abundant at Park City later in season, and I think this was the same.

A trip on Monday forenoon to the lowlands in the vicinity of the Jordan River convinced me that collecting in dry localities was not profitable. The *Cœnonympha*, *pamphiloides* and *ochracea* were found here, also a few *Lycæna* and *Phyciodes*.

In the afternoon, with Prof. Smith of the Salt Lake Academy, a trip was taken to Red Butte Cañon up on the mountains above Fort Douglass. There the first *Argynnis* were taken. It surprises one not accustomed to the mountains to note the changes in vegetation as he ascends. On this trip a few *A. meadii* were seen and several taken. In a few days this species and *A. nevadensis* were abundant in the same locality. Along a tramway

running up this cañon *Nisoniades brizo*, *Eudamus nevada*, *E. tityrus*, *Lycæna pheres* and *acmon*, *Pyrgus tessellata* and numerous beautiful Odonata were found.

As an illustration of the abundance of the *Argynnis*, on June 20th, fifty of the two species *meadii* and *nevadensis* were taken. The former were found in the valley or lower part of the cañon, and nearly all were taken on the blossoms of *Achillea millefolium*. I soon found the easiest way to take them was to walk up and down the road and quietly capture them while sipping the nectar, for when once started they were not easily caught.

The *A. nevadensis* were found farther up the mountain sides, and were most abundant on the sunny slopes, where they were flitting close to the ground under and through the *Artemisia*. Several unsuccessful chases up the mountain side and one or two falls made me wonder if there was not a better way. I noted that nearly all were working their way up the mountain and seemed to prefer a certain wind-protected patch leading up a narrow but not deep gorge which was so steep one could only ascend it by holding to the shrubs of *Artemisia* and *Quercus gambelii*.

On taking my place near the head of this gorge, I found the question solved, for I had simply to stand and with one quick sweep of the net capture them as they attempted to pass. This method proved so much easier and more satisfactory that I gave up tearing clothes and nets in chasing specimens through the thick brush. It was often interesting to note butterflies flitting from flower to flower up the mountain keeping in the sunlight as the source of light gradually sank to rest behind the hills and then returning to the valleys in same manner the next morning.

The valleys or cuts between parallel ranges always were the best places for collecting, except for such genera as *Parnassius* and *Chionobas*.

Besides species mentioned, *Anthocharis ausonides*, *Nisoniades lucilius*, *Limenitis weidemeyerii*, *Melitæa nubigena*, *Colias edwardsii*, *Pieris occidentalis*, *D. archippus* and *Pyrameis carye* were taken in Red Butte Cañon.

June 23d I left Salt Lake City for Park City, which is thirty-two miles away, and at an elevation of 7000 feet. Here the most of my collecting was done, an account of which will be given in my next article.

On August 19th Mrs. S. and myself returned to Salt Lake, and Monday the 21st visited Red Butte Cañon for the last time. *Satyrus ariane* was abundant, but all old and mostly broken specimens. A few *Pamphila agricola*, two *Thecla melinus*, and quite a number of *Thecla crysalus* were taken. Two *Catocala* were seen, the only specimens noted during our trip. Several *Syneda* were seen, but of the genus *Catocala* both Park City and Salt Lake regions seemed to be barren. On the mountains above Park City *Syneda adumbrata* was abundant.

Another, to me, unaccountable fact was, that nothing would come to sugar. A preparation which always proves successful here was tried at Park City, but nothing—*not one specimen*, so far as I could determine, came even to sample the mixture. Another preparation, suggested by Mr. B. Neumoegen, was tried night after night with the same results. I can only account for this in one of two ways: either the nights were too cold, or the altitude too great. What few Noctuids I took came to the light from my lamp placed in an open window, or were taken during the day-time on shrubs and grasses.

Before closing this first article I wish to repeat and emphasize two suggestions which I had from Dr. Skinner just after I began collecting in Utah: First, "Take every specimen you see;" second, "Whenever possible take specimens of the sexes in coitu placing them in same paper."

I believe that no one can positively identify species on the wing. In my own experience some of my best captures were made when I supposed I was taking old acquaintances. A beautiful female *Argynnis leto* was supposed to be a faded *Vanessa antiopa* until Mrs. S. assured me it was not, and I captured it by way of proof.

———o———

ON THE GENUS ERAX.

By S. W. Williston.

Next to *Asilus*, in its wide sense, there is no genus of the Asilidæ which presents more difficulties to the student than does *Erax*. Osten Sacken well expresses these difficulties in his work on the Central American Diptera in the "Biologia." There are quite a number of species described by the older authors which will probably never be determined with certainty until their types are examined, if they ever are, for doubtless some of the

types are no longer in existence. Furthermore, the genus is a large one; it has already become unwieldy, and it requires division, for convenience sake, if nothing else. Hitherto, however, there have been no characters discovered which will satisfactorily serve this purpose. In my attempt at the elucidation of our own species, in the "Transactions" Amer. Ent. Soc. xii, p. 64, I was tempted to separate three by an anomalous peculiarity in the neuration, but forbore to do so for reasons which seemed to be important. Mr. Coquillett has, however, recently used this character to define his genus *Efferia*,* in which he has located two of these species and described three new ones. But these new species themselves add still another objection to the acceptation of his genus. It makes comparatively little difference how far we divide genera, provided natural relationships are not disturbed. In the present case we have characters which show decided relationships ignored, and species brought together which have their nearest allies in different groups of *Erax*, as it now remains with Mr. Coquillett's species removed. In *E. anomalus*, one of the species included in *Efferia*, a striking character is the pilosity of the abdomen, which is, as I described it, "parted down the middle and combed outwards," a character found only in *candida* among the other species of *Efferia*, but which does occur in various other species of *Erax*, *E. stamineus* for instance. Again, in certain species of *Erax*, *E. jubatus* for example, we find an equally remarkable development of the hair of the mesonotum, which is developed "mane-like" along the middle. This character occurs in only one of the six species with three submarginal cells, *E. rava* Coq. Furthermore, should the genus be acceptable, it would be better to use the name *Eichoichemus*, proposed for it by Bigot, with *Erax flavianalis* Macquart (Dipt. Exot. Suppl. iii, p. 186, pl. ii, fig. 12*a*, not 13) as its type.

A Scotchman who wanted to sell some bees inserted the following advertisement in the local paper: "Extensive sale of live stock, comprising no less than 140,000 head, with an unlimited right of pasturage."—*New York Tribune.*

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* "Canadian Entomologist," xxv, p. 175.

ELEMENTARY ENTOMOLOGY.

MICROLEPIDOPTERA.—Part II.

By Prof. C. H. FERNALD, Amherst, Mass.

The family Tineidæ or Leaf-miners, is one of the largest of the Lepidoptera. It includes insects ranging in expanse of wings from 3 to 55 mm., but a large majority are much below the medium size. Notwithstanding their abundance they have been very much neglected by collectors and students in this country.

The head in some species is covered above and in front with erect hair-like scales which give it a rough appearance. Other species have the head rough above, but smooth in front, and still others have the head covered in front and above with scales that lie flat, giving the head a smooth appearance over the whole surface. The tongue is generally present, though sometimes absent. The labial palpi are almost always present, often long, curved up in front, with the third joint long, slim and pointed, especially in many of the larger species, which in other respects, more or less resemble the Tortricids. Sometimes they are short and inclined downwards. In some species they are covered with scales that are closely appressed to the surface, and in others with loose diverging hairs, and sometimes the second joint is more or less tufted.

The maxillary palpi are generally, though not always, present and sometimes have as many as five or six joints. The ocelli are present in some species, but absent in others. The eyes are quite prominent, circular, ovoid, or elliptical in outline. The antennæ are generally from two-thirds to three-fourths as long as the costa, though in a few cases they are less than half as long as the wing, while on the other hand they are sometimes three or four times as long as the fore wing. They are generally smooth, though in some species they are more or less strongly ciliated. Frequently a tuft of hair arises from the basal joint, and in some groups this joint is expanded into a broad concave cap, which entirely covers the eye when the insect is at rest.

The thorax is smooth, and the abdomen has no unusual characters. The legs are rather long and slim. The fore tibiæ usually have a tibial plate near the end, and the middle tibiæ have a pair of spurs at the end, while the hind tibiæ have a pair of spurs

at the end and another pair near the middle. The inner spurs are much longer than the outer. The hind tibiæ are in many species clothed with long hairs along the upperside.

The wings vary in form from trapezoidal to narrow or lanceolate, and in most cases have long fringes, especially toward the anal angle of the hind wings. The venation is normal in those species that have broad wings, but incomplete in many of the narrow winged species. The hind wings are of plain colors and without markings, while the fore wings of many, especially of the smaller species, are most beautifully and brilliantly colored, and the markings are very sharply defined. I know of nothing in nature that rivals the indescribable beauty of many of these little minims of creation. Without doubt the plan of coloration was inherited, but heightened and intensified by natural selection. Some years ago while walking by a maple tree I saw what looked like the excrement of a small bird on a leaf of the maple, but, on closer examination, it proved to be a *Stenoma schlægeri* resting on the leaf. So perfect was the resemblance to the excrement of a bird that the protection seemed perfect. This observation has been made by others on the same insect.

The members of this family are principally vegetable feeders, yet a few of them feed on hair, feathers, and woolen fabrics, often causing great injury. Many of those living on vegetable matter are of economic importance since they feed on such plants as are of direct value to man, while a large number of the species feed on plants that are of little or no value.

The larvæ of the larger species feed under ground on the roots of plants; between leaves rolled or drawn together; or burrow in stems, fungi or decayed wood. Some of the larvæ of the smaller species live in peculiarly shaped cases which they form from portions of the leaves on which they feed. The great majority of the smaller species mine between the cuticles of the leaves. These mines are very plainly visible, and their peculiar form is characteristic of the species.

A few of these insects hibernate during the Winter in the imago state; a much larger number hibernate in the larval state, while many pass the Winter in the pupal state.

Some of the species fly in the middle of the day in the hot sun; others fly in the night, but a great majority fly in the early morning or near sunset, especially on warm and calm evenings. Very

few are attracted to light or to sugar, but many of the larger species are easily "flushed" from their resting places and may be taken in the net.

The Tineidæ have a world-wide distribution, but certain groups are better represented in some parts of the world than in others. They have been discovered in rocks of the Miocene period and also in amber, indicating their presence on earth in early tertiary times.

The classifications thus far given are based too largely on superficial characters, except the one given of a part of the family by Mr. Meyrick, and this needs verification for the species of this country. I have already made critical studies on the structure of a large number of our species, but have not yet gone far enough to give a satisfactory synoptical table.

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NOTES ON A FEW SPECIES OF REARED COLEOPTERA.

By F. M. Webster.

Leptotrachelus dorsalis Fab.—The larvæ of this species were first observed by me on July 22, 1884, actively engaged in destroying the larvæ of the wheat straw worm, *Isosoma tritici* Riley, which the reaper had left exposed in the stubble. Early in August they were observed to stop the cavity in the upper end of the stubble with bits detached from the inside and rolled into a ball. August 11th larvæ, pupæ and adults were observed in stubbles that had thus been plugged up, a single individual only occupying a stubble. I have no description of the larva, except that it is slender, depressed, 8 mm. in length and very active. See Rep. Comm. Agr. 1884, p. 387.

Phalacrus politus Mels.—Adults reared August 4th from heads of rye affected with smut. Larvæ observed in these heads on July 12th, at which time they were isolated in breeding-jar. The same species breeds in smut on corn.

Neoclytus erythrocephalus Fab.—Observed female ovipositing in trunk of dead apple tree at Columbus, Ohio, July 21-24, 1891. From this same tree trunk adults emerged May 31, 1892.

Bruchus mimus Say.—Reared from seeds of Red Bud, *Cercis canadensis* L.

Disonycha caroliniana Fab.—I reared the adult at Lafayette, Ind., from a larva captured while feeding on the foliage of the

common Purslane, *Portulaca oleracea* L. Dr. Horn ("Transactions" Am. Ent. Soc. vol. xvi, p. 205) states that the species occurs from Pennsylvania to Florida, he having also a specimen in his cabinet from Missouri, "doubtful as to locality." My specimen was determined at the Department of Agriculture at Washington, where it was sent under No. 1376, July 6, 1891.

Cistela brevis Say.—I have reared adults of this from pupæ found in the decaying portion of a trunk of Red Bud, *Cercis canadensis* L. in Illinois, where, in the northern portion as well as in Indiana and Ohio, I have collected the light colored form, while in Ohio both this and the black form occur. It was the light form that was reared.

Apion segnipes Say.—Adults, larvæ and pupæ, found in pods of *Tephrosia virginiana* Pers. collected near Toledo, Ohio, October 5th, by Mr. J. S. Hine. The major portion of the larvæ had transformed in the pods, in the fields, as early as 14th of September.

Brachytarsus limbatus Say.—Adults were observed in the act of ovipositing in the bloom of Sneeze-weed, *Helenium autumale* L. near Wooster, Ohio, September 7th. Larvæ reach full growth in the fall and abandon the plants, emerging from the ground as adults the following Spring. The larvæ are rather robust, white, with brown heads, and are usually observed in the curved position common to Rhynchophorus larvæ.

NOTE ON PLATYPSYLLUS.—Since the discovery of this insect much has been written about it by various authors, but none have indicated any means for distinguishing the sexes. Having recently received a very large series collected near Fort Yuma, Cal., the opportunity has been afforded for examining with a view to determining the sexual peculiarities.

As received, in alcohol, the females are apparently longer and are not bent in arc, the males shorter and bent. The wedge-shaped prosternal plate is almost absolutely smooth in the female, but with numerous coarse punctures, especially posteriorly in the male. The last ventral segment is oval at tip in the female, truncate or even slightly emarginate in the male. Finally, the anterior tarsi are slender in the female, and as compared with the tibiæ longer, while in the male there is a distinct shortening and thickening of the three basal joints.

In 39 specimens examined, 12 were females and 27 males, showing a preponderance of more than two to one in the males.—G. H. HORN, M.D.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., MAY, 1894.

TYPE SPECIMENS.

WE have received a letter from Prof. T. D. A. Cockerell which expresses our views exactly in regard to type specimens, and we think it so important that we reproduce it here. The majority of types are not unique, and at least one could be spared for some public collection:

"I want, so far as possible, to make a practise of always sending you type specimens along with the descriptions, and I think it would be a remarkably good thing if no descriptions were allowed to stand unless the types were deposited in a public collection. In the term 'public collection' I should include such as that of the American Entomological Society, which I understand can always be seen by respectable entomologists.

"I do not think for a moment that we really could refuse to recognize descriptions not thus represented by types; but we might at least make the practise of placing types in accessible collections a common one, so that public opinion would condemn those who failed to do so. In certain instances it seems justifiable to retain types during one's life-time. Thus, Lord Walsingham is keeping his types of Tineidæ, which he no doubt finds necessary for his work; but he has arranged that upon his death they shall go to the British Museum. Such a collector as Dr. Holland ought certainly to do the same; possibly he has done so. If on his death his numerous types were distributed by sale it would be a great pity, and I might add, a serious injustice to other lepidopterists all over the world."

PICTURES for the album of the American Entomological Society have been received from Prof. D. S. Kellicott, Dr. R. E. Kunze, C. V. Piper, A. G. Weeks, Jr., M. J. Elrod. We have not received nearly all that we would like. We want pictures of all the entomologists of the world.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc. D., New Brunswick, N. J.

"A strange Worm on a Grapevine."—A singular worm was picked from a leaf of a grapevine yesterday by an aged gentleman, and was shown to a number of people who have seen all sorts of worms, but who never before beheld a worm like unto this. The creature was brought to the *Call* office for exhibition and description. The worm is about two inches and a half in length and a third of an inch in thickness. The color resembles the underside of a grape leaf. The head is quite large in proportion to the body and contains a large bright eye set in the forehead. The worm has fourteen very short feet and walks backward, the tail being erected and having the intelligent motions of a head. The motions of the body are quick and sinuous, and the feet have a remarkable strength in adhering to objects. The most singular feature of the worm, however, consists of a number of small white points sticking out from its body and sides like quills on the fretful porcupine. These are probable cocoons containing the young of the species.—From the Newark Sunday *Call*.

"Grass-eating Insects."—Bulletin No. 64 of the Cornell Experiment Station makes a departure in the character of publications issued by Experiment Stations. The work is entitled, "A synopsis of the species of Crambus of the Ithaca fauna," and it is a thesis in Entomology by Mr. E. P. Felt. The Bulletin covers rather more than fifty pages and is partly popular, but much more technical. There are described first, the general habits of the species of *Crambus* and the remedies to be used against them as a whole. Following we have a synopsis of twenty-seven species, based first upon the markings and afterward upon the sexual characters. This again is followed by special notes on certain of the species in which there is an extremely generalized description of the insects, and a great deal more detailed description in many cases of the early stages, together with records of captures, etc. Finally, we have notes on the affinities of the species, a very complete bibliographical list in which also geographical distribution of the species is given, and a series of fourteen plates illustrating venation, the sexual characteristics, certain egg shapes and the wing maculation of the twenty-seven species. To the farmer the Bulletin will be of little value, principally because the character of the publication will prevent him from reading it, and it was not written primarily with the interest of the farmer in view. From the scientific standpoint the information contained in the Bulletin is very decidedly interesting, and it is a distinct contribution to our knowledge of these insects. There is much that is original in the observations made, and of course the studies on sexual structure, venation, etc., are original, and probably accurate. The work will be an extremely useful one to entomologists, and it brings up again the question that I have already mentioned on previous occasions

as to the character of the Bulletins to be issued by the Experiment Stations. There is room for differences of opinion, and in that view the matter is beyond the domain of criticism; still, I cannot help feeling that a special publication of this character is misplaced in a Bulletin. The farmer will not understand it, and if unfortunately he locks over a Bulletin of this character and finds it beyond him, he is very apt to base an adverse judgment upon Bulletins as a whole. The other objection is one that I have previously made, and is that the information is not thus made completely accessible to the scientific man. The Bulletin is good, and I would advise every entomologist to get it if possible; but I would be as anxious to keep it out of the hands of the farmer. The only criticism that need be made is that the description of the species should have been a little more complete, and that all of the species should have been described, even though no biological notes were at hand. While the figures are good, yet in some cases a few words of description would make matters certain where doubt is left.

Injurious Insects and the use of Insecticides.—Under this title we have a book of 216 pages by Frank W. Sempers, published by W. Atlee Burpee & Co., of Philadelphia. This firm are seed dealers and growers, and have published a number of books which are used in some measure to advertise themselves, being distributed as premiums to those purchasing a certain amount in value of seeds. Mr. Sempers is not an entomologist, and the book is a compilation. On the whole it is a very convenient little publication, giving a considerable amount of information gathered from generally reliable sources, and it is one that will be an addition to the library of every practical agriculturist. While there is little to be said in criticism of what the book actually contains, very much could be said in criticism of what it does not contain. In other words, one of the chief faults of the book is that the selection of insects to be treated is not the most judicious possible. Quite a number of the most destructive forms of the Eastern and Middle United States are omitted, while a considerable number that are scarcely ever heard of as practically injurious are treated at some length. Sometimes, also, one local account of an insect is used to the exclusion of equally important records from other localities. For instance, *Heliothis armiger* is treated only as a cotton insect, while nothing is said of its injuries to corn, and especially to early tomatoes, where they are grown. Mr. Sempers' ignorance of entomological literature appears sometimes where complete accounts of species have been published in places other than those Reports and Bulletins that appear to be accessible to him. Thus the very complete life-history of the Strawberry weevil published in "Insect Life" has been overlooked, and all the information taken from the rather incomplete account published at the Delaware Station. There are several other instances of this character; but nevertheless, if the book be not taken too literally, or as being up to date in all respects, it will be a very handy one for practical use.

The Periodical Cicada.—Before the end of the month for which this number is issued the voice of the *Cicada* will be heard in the land. The brood is a large one, quite widely distributed, and will be one of considerable importance to the agriculturist, unless all previous experiences are overtured. It will give another opportunity for close observation concerning the actual distribution of the species within State lines, and as there are perhaps more working entomologists at the present time than ever before, our knowledge of the actual distribution of the species should be better defined than ever before. Warnings have been given to fruit-growers that it would be unadvisable to set out young trees during the present Spring in those localities where the insects are known to have occurred. A feature that it will be worth while to observe rather closely during the present year, is the influence of Sparrow, that is, of course, the English Sparrow, upon the number of these insects. A few years ago when the *Cicada* appeared in Washington, D. C., and was so elaborately and completely studied by Dr. Riley and his force, the Sparrows destroyed a very large proportion of the specimens. About the same time a brood appeared upon Long Island, extending for a distance of about five miles through a territory that was rather closely examined by myself, embracing Prospect Park and the Ocean Parkway toward Coney Island, along the whole of which distance the English Sparrow has taken undisputed possession to the almost entire extermination of a considerable number of our native birds. At that time I found that the Sparrows had also practically exterminated the *Cicada*, because an entire day's search gave me just one punctured branch, showing eggs deposited. It is, of course, that I do not mean to suggest that that was the only one that escaped; but it is rather remarkable that where the insects were present in such numbers that oviposition should have been so restricted as to make the finding of punctured twigs so difficult a matter. The Sparrows are still becoming more and more numerous each year, and their influence upon the future reoccurrence of this particular brood will be more than ever important. I would suggest that every collector and every entomologist make special observations in the direction of the relation of English Sparrow and the *Cicada*. On the first appearance of the insects note whether there is a special congregation of the birds in the places where they are most abundant. Observe the length of the period during which the insects remain, and whether there is an abrupt cessation within a space of ten days or two weeks. Finally, the region covered by them, or that in which they were most abundant, should be rather closely searched over for egg punctures, and in this way a basis of observed facts will be gathered that will enable us to see whether the next appearance of these insects will be in anything like the numbers of the present expected invasion.

So light is the spider's web that a pound weight of it will reach around the world, and leave enough to reach from Liverpool to New York.—*New York World.*

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

EARLY BUTTERFLIES. March 18th of the present year was the warmest March day in my recollection. *Pieris rapæ* and *Colias philodice* were seen in numbers, and also a fine male *Papilio turnus*. *P. rapæ* and *C. philodice* generally make their appearance around Mt. Airy about the beginning of April, and *P. turnus* a month or so later.—P. LAURENT, Mt. Airy, Pa.

THE MARTINDALE collection of Lepidoptera has been purchased by the Academy of Natural Sciences of Philadelphia. In this the Academy possesses the finest museum collection in America. It is in nine fine cabinets, containing 320 large drawers. The specimens are nearly all faultless, having been largely purchased from dealers. It contains many exceedingly rare species.

CASSIDA NEBULOSA Linn.—In a recent letter from Mr. G. C. Champion I have received the following: "I cannot separate your Cassida from the European *nebulosa*. It is supposed to be destructive to crops of beet in Europe, and has been called the beet shield-beetle. It is recorded from Persia, Siberia, etc."

This message accompanies the return of a *Cassida* given to me by Mr. A. Bolter, collected near the Santa Ana River, California, and indicates the presence of a possibly injurious insect. The species resembles *texana* in sculpture, but is darker in general color. The elytra have numerous small black spots.—GEO. H. HORN, M.D.

IDENTITY OF PEZOMACHUS AND HEMITELES.—The note of Mr. W. H. Patton, under this head in the April number of ENT. NEWS, leads me to record the fact that I have reared *Pezomachus obscurus* Cress. and *Hemiteles drassi* Riley, simultaneously, from the same nest of a Drassid spider. This was of course not conclusive evidence of their generic identity, but I have not been able to get rid of a suspicion that such might ultimately prove to be the case, especially as my breedings belonged to opposite sexes, the *Hemiteles* being all of them males and the *Pezomachus* females. —F. M. WEBSTER.

AN EARLY MOTH.—It may be of interest to some of the readers of the NEWS as to which species of our Geometrid moths is first to make its appearance in the Spring time. In the neighborhood of Philadelphia *Anisopteryx vernata* Harr. is no doubt the first to appear. My earliest record is March 13th, while this year the first was observed March 16th, at Salem, Mass. The species has been observed as early as February 25th (Packard, "Monograph of the Geometrid moths of the U. S." p. 403). *Anisopteryx vernata* is common in some parts of the New England States, while in eastern Pennsylvania it is comparatively rare and causes but little damage. —PHILIP LAURENT, Philadelphia, Pa.

NOTE ON THE OCCURRENCE OF ALETIA ARGILLACEA Hbn. in Ohio.—On Sept. 24, 1891, I captured an adult at electric light in the city of Columbus. Oct. 4, 1893, at Wooster, I took another specimen, in daytime, this one being to all appearances freshly emerged and without the least blemish. These notes are given, not on account of their individual value, but with the hope that, when the phenomena of the northern occurrence of the species is better understood, they may be of service to some one, somewhere.—F. M. WEBSTER.

GRAF-KRUSI, of Gais, St. Gall, Switzerland, has sent us a sample of his silk butterfly-net. This is a folding net with three hinge joints and can be folded very compactly. The special feature of the frame is the arrangement by which any size stick can be made to fit, which is a very great convenience. The most interesting part is the net proper, which is composed of silk and is very light in weight, yet of exceedingly great strength. It is impossible to force a hole through the net with the fingers on account of the strength of the silk and the admirable and ingenious way in which the interlacing meshes are locked, which may be seen under a glass. Such a net would last a long time and would be useful in tropical countries and in the vicinity of blackberry bushes or other vegetation which interferes with the work of the collector. The net is also very inexpensive (see adv.).

IS IT SO?—*Longevity of parasites in dead larvæ.*—In September, 1892, I found a number of full-grown larvæ of *Paonias astylus*, which after a few days went into the ground, with the exception of two of them; these I found dead in the breeding-cage one morning, without being able to ascertain cause of it, as there was absolutely no visible trace of their having been stung by parasites, or suffering from other disease. Being anxious to preserve these larvæ and to show them to my entomological friends, I placed them in a glass bottle, filled with alcohol, and put same on a shelf in my study, frequently looking at them, but never noticing any change in their appearance. By some accident the glass bottle containing these specimens fell to the floor and was broken, when I discovered this, early in March (1894), a week or so after it had occurred, I found the dried up larvæ covered with the small white cocoons of the ichneumon fly (*Pteromalus* sp. ?), certainly a most remarkable thing after their having been in alcohol nearly one and a half years.—H. AICH, 43 Murray St., N. Y.

TO THE EDITOR.—In reply to your postal of yesterday I beg to say I have not communicated to you any "fake" story, but merely related facts. It is absolutely impossible to suppose that the dead larvæ referred to were stung after the bottle was broken, for at this time of the year it is not likely that ichneumon flies should exist in my study, which, by the way, is a rather cold room. As I stated before, I carefully examined larvæ at the time they died, because they looked perfectly healthy, and I was at a loss to account for their death. My theory now, after appearance of the ichneumon cocoon is, that they were stung when quite full grown, that worms destroyed intestines of the larvæ, causing their death, and that they had been feeding inside the dead body all the time, because the alcohol prevented their usual way of coming to the surface. The facts are and remain, that the dead larvæ after being preserved in alcohol for nearly one and a half years were found covered with cocoons of an ichneumon fly on the floor, together with the remnants of the broken bottle.—HERMANN AICH.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III, Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

1. NATURE. London, March 1, 1894.—Note on the habits of a Jamaican spider [*Nephila clavipes*], T. D. A. Cockerell.—March 22. The suspension of foreign bodies from spiders' webs, R. Philipp.

2. SCIENCE GOSSIP. London, March, 1894.—Roosting butterflies, J. T. Carrington, figs.

3. THE AMERICAN NATURALIST. Philadelphia, March, 1894.—A curious hemipteron [*Reduvius personatus*], L. Highfield.—April, 1894. The white marked Tussock-moth (*Orgyia leucostigma* Sm. and Abb.) in Chicago, J. L. Hancock, figs.

4. THE OTTAWA NATURALIST, February and March, 1894.—*Corydalis cornuta*, J. Fletcher.

5. BERICHTE DER NATURFORSCHENDEN GESELLSCHAFT zu Freiburg i B. viii. Zoologische Abhandlungen August Weismann zu seinem sechzigsten Geburtstage 17 Januar, 1894, gewidmet; 1894.—On abnormal conditions in the beehive, Dr. O. vom Rath. On seasonal dimorphism and polymorphism among Japanese Lepidoptera, Dr. A. Fritze.

6. PROCEEDINGS OF THE INDIANA ACADEMY OF SCIENCE, 1892. Brookville, Ind., 1893.—Modern geographical distribution of insects in Indiana, F. M. Webster, 1 map. A partial list of new species of parasitic Hymenoptera reared in Indiana, id. The Locustidæ of Indiana, W. S. Blatchley. The Blattidæ of Indiana, id.

7. JOURNAL OF THE ROYAL MICROSCOPICAL SOCIETY, 1894, pt. 1. London, February, 1894.—The progress and present state of our knowledge of the Acari (President's address), A. D. Michael.

8. THE AMERICAN TERTIARY APHIDÆ, with a list of the known species and tables for their determination. By Samuel Hubbard Scudder. Extract from the thirteenth annual report of the Director of the U. S. Geological Survey. Washington, 1894. Pp. 341–366. Pls. cii–cvi.

9. PSYCHE. Cambridge, Mass., March, 1894.—The habits of the Aculeate Hymenoptera—ii, W. H. Ashmead. New and undescribed genera and species of West African Noctuidæ—ii, W. J. Holland, figs. The Nemastomatidæ and Trogulidæ of the United States, N. Banks. Wing-length in some New England Acrididæ—ii, A. P. Morse.—April, 1894. The habits of the aculeate Hymenoptera—iii, W. H. Ashmead. New and undescribed genera and species of West African Noctuidæ—iii, W. J. Holland. Early stages of *Spilosoma latipennis*, C. G. Soule.

10. ENTOMOLOGISCHE NACHRICHTEN, xx, 3. Berlin, February, 1894. —Synonymic catalogue of European parasitic bees, Dr. v. Dalla Torre and H. Friese.

11. DESCRIPTION OF TWO NEW DELTOID MOTHS. By G. H. French. From Bulletin Illinois State Laboratory of Natural History, vol. 4, art. ii. Champaign, Ill., March 10, 1894.

12. ENTOMOLOGICAL MATERIA MEDICA; or an enumeration of insects employed by physicians as remedial agents. Read at the World's Medical Congress in the city of Chicago, Ill., June 2, 1893. By Richard Ernest Kunze, M.D., etc., New York, 20 pp.

13. OBSERVATIONS ON SOME ENTOMOPHTHOREÆ. By F. M. Webster. From Journal of Cincinnati Society of Natural History, January, 1894, pp. 173–177.

14. PROCEEDINGS OF THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, iii, 1 (Jan. 5, 1893–June 1, 1893). Issued March 8, 1894.—Parasitism, C. W. Stiles. Notes on the genus *Centrodora*, W. H. Ashmead. Note on

Brathinus, H. G. Hubbard. A peculiar structural feature of the Elasminæ, L. O. Howard. A parasitic Scolytid, E. A. Schwarz. The curious defenses constructed by *Melipona* and *Trigona*, F. Benton. Note on the ovipositor of some species of *Donacia*, E. A. Schwarz, figs. Degeneration by disuse of certain organs in spiders, G. Marx. A synopsis of the Spalangiinæ of North America, W. H. Ashmead. Note on the Coruco, a hemipterous insect which infests poultry in southern New Mexico, C. H. T. Townsend. Descriptions of two Rhynchophorous Coleoptera from semi-tropical Florida, E. A. Schwarz. Notes upon wasps—i, W. H. Patton. Synopsis of the North American species of *Toxoneura* Say, W. H. Ashmead. Continuation of the life-history of the whip-tail scorpion, G. Marx. Notes on the family Pachylommatoideæ, W. H. Ashmead. The Death's-head moth in relation to honey bees, F. Benton. Further notes on *Lachnosterna*, C. V. Riley. Notes on Coccidæ, id.

15. TRANSACTIONS OF THE CITY OF LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY for the year 1893 (1894).—This volume, with those for 1891 and 1892, has been received within the past month, their first appearance, to our knowledge, in Philadelphia. Their contents, of course, mainly concern British insects, while such papers as have a general bearing have been already published in the Entomologist's Record. One looks in vain in these volumes for an index or table of contents.

16. COMPTES RENDUS. L'ACADEMIE DES SCIENCES. Paris, Feb. 26, 1894.—Anatomy of the salivary glands of the Philantidæ, M. Bordas. Researches on the anatomy and development of the male genital armor of Lepidoptera, M. Peytoureau.—March 19. Anatomy of the tracheal system of the larvæ of Hymenoptera, M. Bordas.

17. THE BRITISH NATURALIST. New series, No. 1. London, Jan. 15, 1894. No. 3, March 15.—What constitutes a British insect at the present time? C. S. Gregson. The Pterophorina of Britain (cont.), J. W. Tutt. Air breathing Arthropods, L. Greening, 3 pls.

18. CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION. Bulletin No. 64. Ithaca, N. Y., 1894.—On certain grass-eating insects: A synopsis of the species of *Crambus* of the Ithaca fauna, E. P. Felt, figs., 14 pls.

19. BIOLOGIA CENTRALI-AMERICANA. Part cxiv. London, January, 1894.—Arachnida Araneidea, pp. 121–136, O. P. Cambridge. Coleoptera, vol. vi, pt. 2, pp. 165–180, pl. v, G. C. Champion; vol. vii, pp. 177–192, pl. x, H. S. Gorham. Hymenoptera, vol. ii, pl. xii. Lepidoptera Rhopalocera, vol. ii, pp. 329–352, pls. lxxvii–lxxviii, F. D. Godman and O. Salvin. Orthoptera, pp. 105–128, pl. vi, H. de Saussure and L. Zehnter.—Part cxv. February, 1894. Coleoptera, vol. vi, pt. 2, pls. vi, vii. Hymenoptera, vol. ii, pp. 257–304, P. Cameron. Lepidoptera Rhopalocera, vol. ii, pls. lxxix, lxxx. Orthoptera, pp. 129–160, pl. vii, H. de Saussure and L. Zehnter.

20. THE BOTANICAL GAZETTE. Madison, Wis., March, 1894. Flowers and insects—xii, C. Robertson.

21. JOURNAL OF THE TRINIDAD FIELD NATURALISTS' CLUB, i, 12. Port of Spain, February, 1894.—Notes on some Trinidad Coccidæ, T. D. A. Cockerell. A check list of the Coccidæ of the neotropical region, id.

22. THE CANADIAN ENTOMOLOGIST. London, Ont., March, 1894. Notes on "A revision of the genus *Oeneis* (*Chionobas*)" by Henry J. Elwes, etc. and James Edwards (Trans. Ent. Soc. Lond. 1893, pt. iv, December), W. H. Edwards. Preparatory stages of *Laphygma flavimaculata* Harv., and other notes, H. G. Dyar. Three new West African moths, G. A. Ehrmann. New North American Trypetidæ, D. W. Coquillett. The Odonata of Ithaca, N. Y., N. Banks. Notes on nocturnal Lepidoptera, A. R. Grote. A tetratological trio, W. H. Harrington, figs. The Coccinellidæ of Dodge County, Wisconsin, W. E. Snyder. Winter habits of some Colorado Proctotrypidæ, C. F. Baker. Concerning *Calotarsa ornatipes* Townsend, N. Banks.—April, 1894. New North American Homoptera—vii, E. P. Van Duzee. The life-history of *Rivula propinqualis* Gn., E. P. Felt, figs. Notes on the life-history of *Argyria nivalis* Drury, id. Preparatory stages of *Catocala retecta* Grote, G. H. French. Notes on *Pieris* and *Anthocharis*, H. G. Dyar, figs. Notes on *Parnassius clodius*, J. B. Lembert. Notes on the proposed new genus *Calotarsa*, C. H. T. Townsend. Notes on nocturnal Lepidoptera, A. R. Grote. North American Thysanura—v, A. D. Macgillivray. Genera of Thysanura, T. D. A. Cockerell. *Calotarsa ornatipes*, S. W. Williston.

23. ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, xxxviii, 2. Brussels, February, 1894. List of the Anthicidæ described since the catalogues of MM. Gemminger and Harold (1870–1893), M. Pic.

24. ANNALI DEL MUSEO CIVICO DI STORIA NATURALE DI GENOVA (2), xiii, 1893.—Revision of the system of the Orthoptera and description of the species brought by M. Leonardo Fea from Burmah, C. Brunner de Wattenwyl, 6 pls.

25. ANNALEN DES K. K. NATURHISTORISCHEN HOFMUSEUMS, viii, 2. Vienna, 1893.—New species of the genus *Gorytes* Latr. (Hymenoptera), A. Handlirsch.—3 and 4. On *Ampulex* Jur. (s. l.) and the closely-allied Hymenopterous genera, F. F. Kohl, 3 pls.

26. BULLETIN DE LA SOCIETE D'HISTOIRE NATURELLE DE TOULOUSE, xxvii, January–March, 1893.—On an acarine (*Psorergates simplex* Tyrrell) of the mouse, G. Neumann.

27. ATTI DELLA R. ACCADEMIA DELLE SCIENZE DI TORINO, xxviii, 9a, 1892–93.—On contractions of the striated muscles and the movements of *Bombyx mori*, Dr. M. L. Patrizi, figs.—11a. Observations on the movements and respiratory muscles of the thorax of Coleoptera, L. Camerano.

28. MEMORIE DELLA R. ACCADEMIA DELLE SCIENZE DI TORINO (2), xliii, 1893.—Diptera of Mexico—part i. Stratiomyidæ-Syrphidæ; part ii. Syrphidæ-Conopidæ-Pipunculidæ, Dr. E. Giglio-Tos, 2 pls. Researches on the absolute force of the muscles of insects—flexor muscles of the mandibles of Coleoptera, L. Camerano.

29. SCIENCE. New York, Feb. 23, 1894.—Chilopoda migrating in broad daylight, F. C. Kenyon. Rope of maggots, F. M. Webster.

30. THE ENTOMOLOGIST'S RECORD. London, March 15, 1894.—The life-history of a Lepidopterous insect, comprising some account of its morphology and physiology, J. W. Tutt. Glimpses at American entomology, Ed.

31. JOURNAL DE L'ANATOMIE ET DE LA PHYSIOLOGIE, XXX, 1. Paris, January-February, 1894.—Note on a large marine species of *Bdella* originally from Iceland, Dr. E. Trouessart, 1 fig.

32. FOREST LEAVES, iv, 8. Philadelphia, April, 1894.—The gypsy moth in Massachusetts.

33. ZOE, iv, 4. San Francisco, March, 1894.—Notes on Lepidopterous larvæ, C. H. T. Townsend. *Chariessa lemberti*, J. J. Rivers.

34. PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, 1893, pp. 467-551; 1894.—The North American Larridæ, W. J. Fox.

35. BULLETIN OF THE U. S. GEOLOGICAL SURVEY. No. 101.—Insect fauna of the Rhode Island coal field, S. H. Scudder, Washington, 1893, 2 pls.

36. NINTH REPORT on the Injurious and other Insects of the State of New York for the year 1892. By J. A. Lintner, Ph.D., State entomologist (46th report N. Y. State Museum, pp. 291-495), Albany, 1893.

37. REVUE BIOLOGIQUE DU NORD DE LA FRANCE (6), 6. Lille, March, 1894.—On some Arthropods found in formicaries, R. Moniez, figs.

38. JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY, ii, 1, March, 1894.—A preliminary revision of the Bombyces of America north of Mexico, B. Neumoegen and H. G. Dyar. Notes on Lepidoptera found on Vancouver Island, W. H. Danby. The larva and pupa of *Eucaterva variaria* Grt., C. H. T. Townsend. The seventeen-year Cicada on Staten Island, W. T. Davis. The Phalangida of New York, N. Banks. List of the Coleoptera of Northeastern America, with special reference to the fauna of New York City and vicinity, C. W. Leng and W. Beutenmüller.

39. WEST VIRGINIA AGRICULTURAL EXPERIMENT STATION. Bulletin No. 36. Morgantown, W. Va., February, 1894.—Black holes in wood, A. D. Hopkins.—No. 35. Defects in wood caused by insects, id., figs.

40. LE NATURALISTE CANADIEN. Chicoutimi, Quebec, March, 1894. —L'abbé Provancher, biographical notice (portrait), V. A. Huard.

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Hubbard 14 (*B. californica** Calif.), Schwarz 14 (three) (*Crypturgus alutaceus** Fla., Md. *Anchomus floridanus**, *Loganius ficus** Fla.), Riley 14, Champion 19 (Cassididæ*), Gorham 19 (Coccinellidæ*), Harrington 22, Snyder 22, Pic 23, Camerano 27, 28, Rivers 33*, Leng and Beutenmüller 38, Hopkins 39 (*Carthylus columbianus** W. Va.).

LEPIDOPTERA.

Carrington 2, Hancock 3, Fritze 5, Holland 9 (two), Soule 9, French 11 (*Pseudaglossa forbesii**, *Pallachira hartii** Ill.), 22, Benton 14, Peytoureau 16, Tutt 17, 30, Felt 18, 22 (two), Godman and Salvin 19 (Hesperidæ*), Edwards 22, Dyar 22 (two), Ehrmann 22, Grote 22 (two), Lembert 22, Patrizi 27, Anon. 32, Townsend 33, 38, Neumoegen and Dyar 38, Danby 38.

DIPTERA.

Coquillett 22*, Banks 22, Townsend 22, Williston 22, Giglio-Tos 28*, Webster 29.

HYMENOPTERA.

v. Rath 5, Webster 6, Ashmead 9 (two), 14 (four) (*Centrodora clisiocampæ** Fla., Spalangiinæ*, *Taxoneura**, Pachylommatoideæ*), Dalla Torre and Friese 10, Howard 14, Benton 14, Patton 14 (*Pepsis** Calif.), Bordas 16 (two), Baker 22, Handlirsch 25*, Kohl 25*, Fox 34*, Cameron 19 (*Myzine**, *Mutilla**).

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

MARCH 22, 1894.

A regular stated meeting of the Entomological Section of the Academy of Natural Sciences was held in the Hall, S. W. cor. Nineteenth and Race Streets, this evening, Dr. Geo. H. Horn, Director, presiding. Members present: E. T. Cresson, G. B. Cresson, Calvert, Ridings, Laurent, Skinner, Johnson and Liebeck. Associate: Fox. Dr. Skinner explained a method of dissolving grease from specimens. Instead of wedging a piece of cork in the bottom of a jar or glass, the insect is pinned on a piece of sheet cork and the cork then floated with the insect downward in the gasoline or other liquid used. Dr. Horn described a similar method. Mr. Calvert said that benzine dissolved the powdery substance found on dragonflies, and that alcohol did not, so that he preferred the latter for some specimens. Dr. Horn exhibited a photographic negative of a curious beetle from Lower California, which he had recognized as probably new. He afterwards found that it had been described by Bates as a Longicorn, but belongs to the Rhipiceridæ, and is known as *Vesperoctenus flohri* Bates. Mr. Fox called attention to a bee of the genus *Oxæa* from Lower California. He stated that the genus *Oxæa* had been heretofore restricted to South America, and that the species exhibited, which was new, was most closely related to an undescribed form from Brazil. But three species of the genus had been described, and none had been described since 1865. HENRY SKINNER, *Recorder*.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

Synonymical Notes on some North American Tettigonidæ.

By E. P. Van Duzee, Buffalo, N. Y.

Among the numerous species of *Tettigonia* described by Mr. Walker in his "List of the Homopterous Insects in the British Museum" appear many North American forms from the United States and Canada. Most of these are but redescriptions of species already characterized by earlier authors or by Mr. Walker himself in preceding pages of the same volume.

Recently, in working over the material in my collection, I have been able to settle, to my satisfaction, the synonymy of a few of his doubtful species, which I will give here with some corrections from other authors that may be of interest to American students of these insects. Most of these species have already been located by Signoret, Stal and others, but some of their corrections were erroneous and must be changed. The following notes will help to show the utter worthlessness of Walker's descriptive work. Probably no man ever described so many species of insects in all orders, and certainly no one ever did such careless and unreliable work.

The following are the species of *Tettigonia* accredited by Walker to North America with their synonymy. The pages refer to pt. iii of his "List." The numbers prefixed are the serial numbers of the species in his work:

82. *T. rubrigutlata* p. 763.

Signoret places this as a synonym of *T. sanguinolenta* Fabr., which Stal refers to genus *Diedrocephala* Spin.

84. *T. teliformis* p. 764.

This is *Diedrocephala coccinea* Forst.

92. T. *prasina* p. 768.

Is our common *Diedrocephala novæboracensis* Fitch.

95. *T. herbida* p. 769.

This is *Helochara communis* Fitch. Walker, in 1852, placed this as a synonym of *H. communis*, but Signoret the next year separated it as distinct, and placed Walker's next species, *similis*, as identical with Fitch's *communis*, thus reversing these forms. Then, in 1858, Walker, evidently not recognizing his own species, adopted Signoret's arrangement, which seems to have been followed by all later students. *T. similis* is, however, a very distinct species inhabiting the West Indies. *Helochara communis*,

of which *T. herbida* Walk. is a synonym, has a wide distribution in the United States and Canada, extending south to Florida and Mississippi, west at least to the Rocky Mountains and north to British Columbia and Quebec.

In 1887, Mr. C. W. Woodworth described a species of *Tettigonia* from Illinois as *T. similis*. If his species proves distinct from *T. hieroglyphica* Say, which I doubt, its name will have to be changed.

97. *T. tenella* p. 770.

This is *Tettigonia bifida* Say.

98. *T. innotata* p. 770.

Signoret identifies this with *Diedrocephala mollipes* Say.

99. *T. angulifera* p. 771.

This is a good species, and not a variety of *D. mollipes*, as suggested by Signoret. I have examined specimens from New York and Kansas. It belongs to genus *Diedrocephala* Spin.

100. *T. antica* p. 771.

Signoret places this as a synonym of *T. angulifera*. It may represent the male of *Diedrocephala mollipes* Say.

101. *T. minor* p. 772.

102. *T. producta* p. 772.

The latter name I have employed to designate the smaller melanic form or race of *Diedrocephala mollipes* Say. Its characters are probably of less than specific value; possibly it should not be considered a distinct variety even. *T. minor* seems to be an unusually dark form of this variety.

103. *T. acuta* p. 773.

This is a synonym of *Diedrocephala mollipes* Say.

104. *T. 7-guttata* p. 773.

A good species from Florida. It pertains to genus *Diedrocephala* Spin.

105. *T. 4-plagiata* p. 774.

Signoret describes this as a good species.

107. *T. striata* p. 775.

Evidently this is intended for *Oncometopia costalis* Fabr.

108. *T. lugens* p. 775, and

109. *T. pyrrholelus* p. 775.

Signoret places these as synonyms of *Oncometopia costalis* Fabr., in which he is followed by Walker in his Supplement.

110. *T. nigrifascia* p. 776.

This and the two following are placed by Signoret as synonyms of *T. tripunctata* Fitch, but they certainly represent a distinct species which should be known as *T. nigrifascia* Walk. This is a Mexican form, while *T. tripunctata* Fitch inhabits most of the eastern United States.

111. *T. pallida* p. 776 and
112. *T. albida* p. 777.

Are synonyms of *T. nigrifascia* Walk.

113. *T. robusta* p. 777.

This is *T. histrio* Fabr. according to Dr. Stal (Hemip. Fabr. ii, p. 76). It has been recognized by Mr. Uhler from the West Indies (see ENT. NEWS, iii, p. 60).

115. *T. uniguttata* p. 778.

This is recognized by Signoret as a distinct species, and placed near *nigrifascia* Walk.

67. *T. badia* p. 756.

This species I have been unable to locate satisfactorily. Can it be a *Gypona*, perhaps *scarlatina* Fitch?

———o———

A NEW WAX-SCALE FOUND IN JAMAICA.

By T. D. A. COCKERELL, Las Cruces, N. Mex.

Ceroplastes albolineatus n. sp.—Scale 6 mm. long, pinkish white, plates indistinct, two conspicuous ascending white lines of secretion on each side. Wax extremely thick, its being as great as the breadth of the enclosed insect.

Insect free from wax, 3 mm. long, depressed, showing three rather sharp processes on each side, and a dorsal hump. The "tail" is quite rudimentary.

Derm with round gland-spots, only moderately numerous. Antennæ not very well seen, being broken; but second joint broader than and not so long as third, fourth somewhat longer than third, first and second shaped somewhat alike, but first of course larger than second.

Legs very small, pale brown. Femur a little longer than, and more than twice as broad as tibia. Tarsus about half as long as tibia; tarsal knobbed hairs distinct, with large knobs. Claw short; digitules of claw very large and stout, extending beyond claw, with large knobs.

Food-plant; not identified. With the twigs on which the scales occurred were sent a few fragments of the leaves, which were green above and pinkish purple below, in striking contrast. The

fragments of twigs boiled with the scales in caustic soda gave a very fine madder color.

Locality; Kingston, Jamaica; received from Prof. C. H. T. Townsend, curator of the Jamaica Museum.

The food-plant seems to be some ornamental shrub, and as I did not meet with the scale in Jamaica, I infer that it is probably a recent introduction from some other tropical locality. The indistinctness of the plates, and the great thickness of the wax, is in great contrast to *C. cirripediformis*, and reminds one of *C. ceriferus*. From this latter it is distinguished not only by its appearance, but by the rudimentary condition of the "tail." The long fourth joint of the antenna in *C. albolineatus* is also peculiar as compared with other species, but it requires to be confirmed in specimens with better antennæ. The present species resembles *C. psidii* in its larger digitules, but it has a shorter claw; it is distinguished from *psidii* at once by the absence of the external markings of that species. From *C. floridensis* it differs entirely in appearance, and is also much larger; from *C. depressus* it is distinguished by external features at a glance. It cannot be *C. jamaicensis*, which, though very imperfectly described by White, has distinct plates after the manner of *C. cirripediformis*. From the remaining described species of *Ceroplastes* it is distinguished by characters which it is hardly worth while to enumerate.

A specimen has been sent for coll. Amer. Ent. Society.

ON SOME PSELAPHIDÆ.

By E. Brendel, M.D., Cedar Rapids, Iowa.

There is before me a Pselaphid from the Dry Tortugas, which, according to A. Raffray's classification, is a *Bryaxis* of a very elongate depressed form, resembling in outlines the European *Trichonyx;* but by comparing the figures and the synoptical characters given by Raffray, it seems to claim a place near the Australian genus *Briara* Reitter. I give a description of it:

BRIARAXIS Brendel.

Tarsi with one claw, trochanters obliquely inserted into the femora, posterior coxæ not conical, not prominent, with their mutual distance equaling twice the thickness of the femur; infe-

rior surface of the head convex, with a faint medial carina; prosternum convex, not carinate; mesosternum short, narrow between the globular coxæ; metasternum very large, longitudinally sulcate, densely punctate; the second ventral as long as the two adjoining segments.

Briaraxis depressa n. sp.—Depressed, dark ferruginous, pubescence fine, sericeous, punctate throughout. Length 1.15 mm.

Head behind the eyes one-half wider than the front, vertex flat, with four small nude foveæ, two near the frontal margin, connected by a faint transverse line, and two larger ones in a line through the middle of the eyes; occiput triangularly impressed. Antennæ as long as the head and prothorax, joints 1, 2 and 3 subequal, decreasing, 4 smaller, 5 larger, equal to 3; joints 6 and 7 equal to 4, all longer than wide, obconical; 8 quadrate; 9 little longer, transverse, as wide as 2; 10 one-fourth wider, as long as 2; the last ovoid, not acuminate, one-half longer than wide. Sides of the prothorax rounded (not edged); disc broadly convex, widest through the anterior third, where the outlines are evenly arcuate, thence almost straight to the neck and the base; the lateral pubescent foveæ situated in a shallow ample depression, the medial one nearer the base, small, prolonged forward as a shallow, ill-defined medial depression. Elytra depressed, widest near the posterior angles and one-third wider than the shoulder width, and but little wider than the length of the suture; base trifoveate, the outer fovea large, with a discal line on third of the elytral length. Abdomen without basal carinæ, border rather narrow, the segments subequal in length.

Dry Tortugas.

Bryaxis (Reichenbachia) arthritica n. sp.—Impunctate, brownish red, pubescence short, inconspicuous. Length 1.4 mm.

Head flat, the disc from the front to the base one-third longer than the basal width, very slightly narrower on the front; eyes prominent, foveæ equidistant, the frontal foveæ situated in a transverse impression, the lateral ones not more than their own diameter from the eye. Prothorax convex, so that the lateral foveæ appear from above as ellipses. Elytra somewhat alutaceous, with three basal foveæ. Abdominal basal carinæ divergent, one-half the length of the segment, and one-third as distant as the total width. Ventrals without sexual marks.

♂.—Antennæ compressed from side to side, very irregular, not one joint like the other (Pl. v, fig. 7). Intermediate trochanters armed with a blunt thorn.

San Obispo, Cal. (Carl Fuchs).

Ctenisis dispar Sharp.

In a recent paper in the "Transactions" of the American Entomological Society (xx, p. 282) I mentioned the occurrence of this species in Arizona, found by A. Bolter.

Mr. Casey presumes it to be different from *Ct. dispar*. His description, except the color, tallies exactly with Sharp's description and the figure in the "Biologia Centrali-Americana," and with my Mexican specimens, which have come to me from the hands of A. Raffray. Bolter's specimen is a female, and my male specimen differ slightly in the length of the eighth antennal joint, which Casey pounces upon to honor friend Raffray with a doubtful n. sp. from a unique.

Another presumption of Casey is that *Bryaxis perforata* Aubé will be restored, and presumes again *B. perforata* Brend. should be named *B. terebrata* Casey. Casey, I think, has not seen a specimen of *B. perforata* Brend., but describes from the same locality the old *perforata* again as *B. intricata* Casey. There are several other presumptions upon which Casey founded n. g. and n. sp. to which I have at present no time to refer.

I give on Plate V figures of the above described species and of some South American forms, which may interest somebody.

EXPLANATION OF PLATE V.

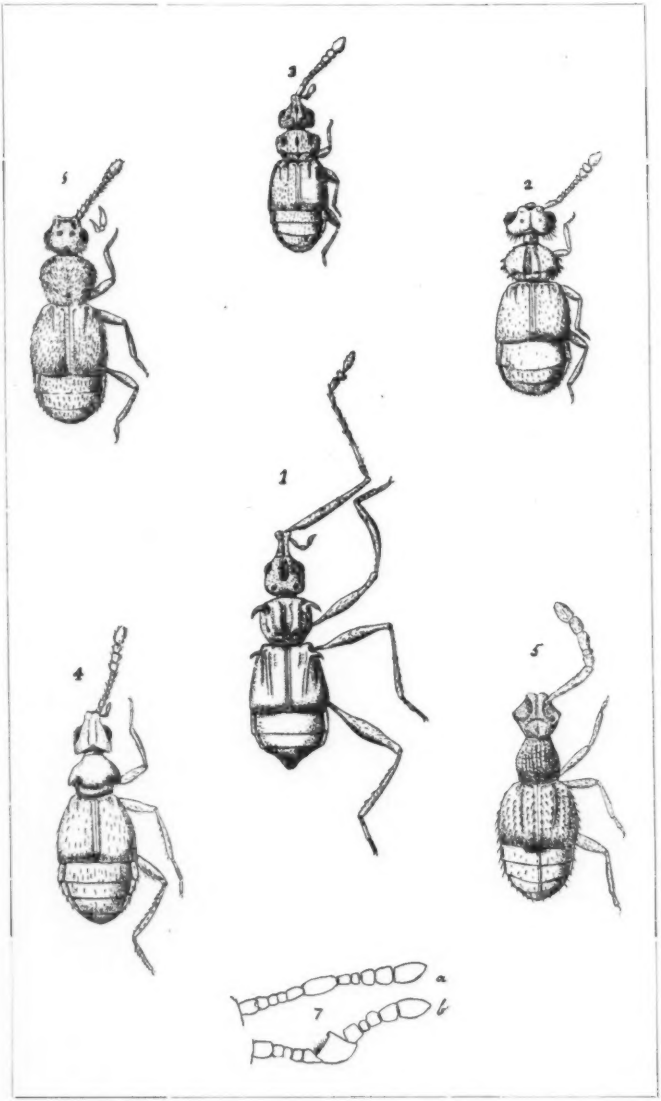
Fig. 1. *Metopioxis gladiator* Reitter. Brazil.
" 2. *Rhexius braziliensis* Schauf. Brazil.
" 3. *Rhinocepsis gracilis* Schauf. Amazons.
" 4. *Jubus tetratomus* Reitter. Venezuela.
" 5. *Goniacerus simonis* Raffray. Venezuela.
" 6. *Briaraxis depressa* Brendel. Dry Tortugas.
" 7. Antenna of *Bryaxis arthritica* Brendel; *a*, upper view; *b*, side view.

OBITUARY.

EDWARD NORTON died at his home in Farmington, Conn., on April 8, 1894, of pneumonia, aged 70 years. He was an authority in Hymenoptera. A more extended notice will be given in the near future.

In Kärnter, on January 11th of this year, EMANUEL LIEGEL. He was born April 5, 1859, and interested in Coleoptera and Hymenoptera, on which subjects he published several articles, and at the time of his death had just completed the manuscript of a Fauna Carinthiaca.

ENTOMOLOGICAL NEWS for April was mailed March 30, 1894.



See page 158.

PSELAPHIDÆ (Brendel).